

REMARKS

The above amendments are made in response to the Office action of January 23, 2007. The Examiner's reconsideration is respectfully requested in view of the above amendment and the following remarks.

Claims 1-5, 9-12, 15-18, 20 and 21 stand rejected, while Applicant gratefully acknowledges that claims 6-8, 13, 14 and 19 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Claims 1, 12 and 13 have been amended. Claims 1-18 and 20-22 are pending in the present application. Support for the amendments to claims 1, 12 and 13 can be found at least in the claims and specification as originally filed. No new matter has been added.

Claim Rejections Under 35 U.S.C. § 112

Claims 13, 14 and 16 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the limitation "the light source" in claims 13 and 16 lacks sufficient antecedent basis. The Examiner also rejects claim 14 as being dependent upon a rejected base claim.

It is respectfully submitted that "a light source" is recited in claim 1, from which claims 13, 14 and 16 depend, and thus provides antecedent basis for recitation of "the light source" in claims 13 and 16. Therefore, it is respectfully requested that the rejection to claims 13, 14 and 16 under § 112, second paragraph, be withdrawn.

Claim Rejections Under 35 U.S.C. § 102

In order to anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1274 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one

skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Claims 1 and 9 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Tsunoda et al. (U.S. Patent No. 5,912,713, hereinafter “Tsunoda”). The Examiner states that Tsunoda discloses all of the elements of the abovementioned claims, primarily in FIG. 1, the Abstract, and column 1, lines 41-47, column 5, lines 52-61, column 6, lines 45 through column 7, line 19. Applicant respectfully traverses for at least the reasons set forth below.

Claim 1, from which claim 9 depends, has been amended to recite, *inter alia*, a voltage supplying unit to apply AC voltage synchronized with the modulated signal to the light source so as to drive the light source

As defined in Claim 1, the present invention relates to a device for driving light in an image display device. The device of Claim 1 comprises input terminals, an oscillator, a controller, and a voltage supplying unit (as amended). The voltage supplying unit AC applies AC voltage synchronized with the modulated signal to the light source so as to drive the light source. Specifically, the voltage supplying unit AC is further defined as a switch circuit and a transformer as in amended Claims 12 and 13.

In contrast, Tsunoda does not relate to a device for driving light in an image display device, but rather relates merely to a PLL circuit of a control apparatus to control display panel unit 3 (refer to Figs.1 and 2 of Tsunoda). Thus, Tsunoda is completely different from the present invention in function. Further, Tsunoda does not disclose the controller to modulate a reference signal in response to the control signal and output a modulated signal, and the voltage supplying unit.

In particular, Tsunoda does not disclose, teach or suggest input terminals to receive a horizontal synchronization signal and a control signal externally provided; an oscillator to generate a reference signal having a frequency; a controller to modulate the reference signal in response to the control signal and output a modulated signal; a voltage supplying unit to apply AC voltage synchronized with the modulated signal to the light source so as to drive the light source, as in amended independent claim 1.

Thus, amended claim 1 is believed to be patentably distinct and not anticipated by Tsunoda. Claims 2-16 depend from claim 1, and thus includes all the limitations of amended claim 1. It is thus believed that the dependent claims 2-16 are allowable for at least the reasons given for independent amended claim 1, which is believed to be allowable.

Accordingly, Applicant respectfully requests that the Examiner withdraw his rejections and allow claims 1-16 under 35 U.S.C. §102(b).

Rejections Under 35 U.S.C. § 103

In order for an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996). See MPEP 2143.

Claims 1-5, 9-12, 15, 17, 18, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Tanaka et al. (U.S. Patent No. 6,011,534, hereinafter "Tanaka") in view of Jefferson (U.S. Patent No. 6,127,865, hereinafter "Jefferson"). The Examiner states that Tanaka discloses all of the elements of claims 1 and 15 except, *a controller that modulates the reference signal in response to the control signal and outputs a modulated signal such that the modulation is a pulse width modulation*, which the Examiner further states is disclosed in FIG. 3 and column 6, line 55 through column 7, line 11 of Jefferson.

The Examiner states that Tanaka discloses all of the elements of claims 4 and 5 except, *that the circuit of the phase comparator includes a logic gate*, which the

Examiner further states would have been obvious to one of ordinary skill in the art as evidenced by Okamoto (U.S. Patent No. 6,944,252).

The Examiner states that Tanaka discloses all of the elements of claims 9 and 10 except, *a frequency driver that divides a frequency of the modulated signal provided from the controller to generate a frequency-divided signal such that the frequency of the modulated signal is twice a frequency of the frequency-divided signal*, which the Examiner further states is disclosed in column 5, lines 64-65 and column 8, lines 44-53 of Jefferson.

The Examiner states that Tanaka discloses all of the elements of claim 11 except, *a low pass filter that filters out high frequency components of the output signal of the phase comparator*, which the Examiner further states is disclosed in FIG. 3 and column 6, lines 34-40 of Jefferson.

The Examiner states that Tanaka discloses all of the elements of claim 12 except, *a switch circuit that receives the modulated signal from the controller and generates a switch signal having on and off levels by switching a supply voltage in accordance with the modulated signal*, which the Examiner further states is disclosed in FIG. 3 and column 5, lines 65-67 of Jefferson.

The Examiner states that Tanaka discloses all of the elements of claim 20 except, *performing pulse width modulation with respect to the reference signal to generate a modulated signal, and dividing a frequency of the modulated signal to generate a frequency-divided signal*, which the Examiner further states is disclosed primarily in FIG. 3 and column 5, lines 64-65, column 6, line 55 through column 7, line 11 and column 8, lines 44-53 of Jefferson.

The Examiner states that Tanaka discloses all of the elements of claim 21 except, *filtering out high frequency components of the result signal obtained from the comparing step*, which the Examiner further states is disclosed primarily in column 5, lines 64-65 and column 8, lines 44-53.

Applicant respectfully traverses all of the above § 103(a) rejections for at least the reasons set forth below.

Regarding the rejection of Claims 1 and 17 under USC 103(a), it is respectfully submitted that Tanaka does not relate to a device for driving light in an image display

device, but rather relates merely to a driving circuit for an image display device, as described above with respect to Tsunoda. Further, Tanaka does not disclose the controller and the voltage supplying unit, as recited in amended independent claim 1. Moreover, the Examiner alleges that the voltage control oscillator generates a signal in response to the output signal of the phase comparator. However, referring to col. 7 lines 1-5 of Tanaka, the voltage control oscillator oscillates a signal at a frequency corresponding to a horizontal synchronizing signal input. In contrast and according to the present invention, the oscillator adjusts the frequency of the reference signal in response to the output signal of the phase difference detecting unit, as recited in independent claim 17.

Further, Jefferson is not related to a device for driving light in an image display device. Thus, the PFD of Jefferson receives REFCLK and fdbk CLK, which is not related to signals of display. In addition, Jefferson does not disclose the controller (claim 1), which the Examiner alleges that Tanaka fails to disclose, and the voltage supplying unit (as recited in amended claim 1).

Thus, Applicant submits that neither Tanaka, Jefferson, nor Okamoto, either alone or in combination, render obvious the subject matter of amended independent claim 1 and independent claim 17. Claims 2-16 depend from amended claim 1, and thus includes the allowable elements of amended claim 1. Likewise, claims 18 and 20-21 depend from amended claim 17, and thus includes the allowable elements of amended claim 17. It is thus believed that the dependent claims are patentable over the cited references for at least the reasons given above for amended independent claims 1 and 17.

Accordingly, it is respectfully submitted that the claimed invention is allowable over the cited references. The Examiner's withdrawal of the rejection of claims 1-5, 9-12, 15, 17, 18, 20 and 21, and their subsequent allowance is respectfully requested.

Conclusion

In light of the above remarks, the present application including claims 1-21 are believed to be in condition for allowance. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding rejections.

If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

If there are any charges due with respect to this response, please charge them to Deposit Account No. 06-1130 maintained by Applicant's Attorneys.

Respectfully submitted,

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Date: April 23, 2007